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# A Prospective Study on Assessment of Surgical and Pharmacotherapeutic Treatment Pattern in Women with Endometriosis in a Tertiary Care Hospital

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**KEYWORDS**
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**ABSTRACT**
**Introduction:** Endometriosis is a female reproductive system disorder where the endometrium-like tissue develops outside of the uterus; it usually affects the ovaries and peritoneum, causing premenstrual discomfort and dysmenorrhea. Aim: The study aimed to assess Surgical and Pharmacotherapeutic treatment pattern in women with endometriosis in a tertiary care hospital. **Methodology:** The prospective observational study was carried out for a period of 6 months. The study was conducted in Gynecology department in a tertiary care hospital. A written and informed consent was obtained from the recruited patients. A Total of 45 patients were enrolled in the study. **Results and Discussion:** In our study female patients were more 25 (55.55 %) compared to male patients 20(44.445%). In our study rural area patients were more 26(57.77 %), compared to urban area patients were 19 (42.22 %). Risk factors of Endometriosis includes Irregular menstrual cycle patients were more 18 (40%) compared to other risk factors. Drug prescribing pattern for endometriosis includes NSAIDs prescribed patients were more 10 (22.22%), compared to other drugs. Conclusion: The study concludes that periodic drug prescribing must be verified to promote rational and optimal use of healthcare resources. The effective clinical intervention programme are required to promote more appropriate use of drugs.

## INTRODUCTION

Endometriosis is a female reproductive system disorder where the endometrium-like tissue develops outside of the uterus; it usually affects the ovaries and peritoneum, causing premenstrual discomfort and dysmenorrhea. The most widely recognized explanation of endometriosis is that endometrial tissue is implanted in the peritoneal cavity by retrograde menstruation. The first theory describing the origin of endometriosis is the retrograde menstruation theory. According to this idea, endometriosis develops when sloughed endometrial cells and debris after menstruation travel retrogradely down the fallopian tubes and enter the pelvic cavity. 76%-90% of women having patent fallopian tubes experience retrograde menstruation, albeit not all of these women have endometriosis1-2. Endometrial cell resorption into the abdominal wall during menstrual flow is a common occurrence in 90% of menstrual females with patent fallopian tubes, even though it is only seen in those with hormonal or immunological issues. The peritoneal fluid of women with endometriosis has higher amounts of macrophages, T-lymphocytes, and B-lymphocytes, which are more susceptible to apoptosis[3-9].

**Pathophysiology**

The understanding of the pathophysiology of endometriosis remains incomplete in many aspects, and there is not a coherent suggested theory to explain all different types of endometriosis, integrating the epigenetic, genetic, immunological, and environmental data. Of the proposed pathogenic theories, the most plausible is Sampson's theory, suggesting that with retrograde menstruation, viable cells, and menstrual fragments can migrate through the Fallopian tubes, infiltrate into the peritoneal cavity, and then proliferate and cause chronic inflammation. The fact that retrograde menstruation is a phenomenon caused in a large proportion of women of reproductive age, but not all of them suffer from endometriosis, indicates that retrograde menstruation is not enough by itself to cause endometriosis, indicates that there are also other factors contributing to the generation of disease. Other theories, such as the coelomic metaplastic theory and the vascular and lymphatic metastatic theory, are necessary to explain some forms of endometriosis. The role of oxidative stress and ROS, together with genetic, epigenetic, and environmental factors, must be integrated for a more complete picture of the pathogenesis of endometriosis[10-12].

The exact cause of endometriosis is unknown, but it is believed to result from a combination of genetic, immune, and hormonal factors, most notably high estrogen levels. Key theories include retrograde menstruation (blood flowing backward into the pelvis), transformation of abdominal cells, and immune system dysfunction that fails to destroy misplaced tissue. Endometriosis is a chronic, often painful, gynecological condition where endometrial-like tissue grows outside the uterus, causing inflammation, scar tissue, and adhesions. Key clinical features include severe menstrual cramps (dysmenorrhea), chronic pelvic pain, deep pain during intercourse (dyspareunia), and infertility.

It commonly presents in reproductive-age women. Endometriosis is primarily diagnosed through imaging (ultrasound, MRI) or surgical laparoscopy with tissue biopsy. While no single, universally standard blood test confirms it, emerging, non-invasive tests like EndomTest™ or protein-based tests (ProMarker) are emerging to detect biomarkers like CA-125, miRNA, or specific protein signatures. Endometriosis treatments focus on managing pain and reducing,, treating, or removing endometrial tissue to alleviate symptoms and improve fertility. Common approaches include pain medications (NSAIDs), hormonal therapies to suppress the menstrual cycle (pills, IUDs, GnRH agonists), and surgical removal of lesions, typically via laparoscopy. While no definitive cure exists, these methods can manage symptoms.

Lifestyle modifications for endometriosis focus on reducing chronic inflammation, balancing hormones, and managing pain through an anti-inflammatory diet (low in red meat/processed foods, high in fiber), regular gentle exercise (yoga, swimming), stress reduction (meditation), and improving sleep quality. Key changes include avoiding environmental toxins, using heat therapy for pain, and potentially reducing gluten/dairy[13].

## METHODOLOGY

The prospective observational study was carried out for a period of 6 months. The study was conducted in cardiology department in a tertiary care hospital. A written and informed consent was obtained from the recruited patients. A Total of 45 patients were enrolled in the study.

**Study Design**: It was Prospective observational study.

**Study Period**: The Present study was conducted for a period of six months.

**Study site**: The Present study was conducted in cardiology department in a tertiary care hospital.

**Sample size:** It was 45 Patients.

**Inclusion criteria**

- Patients with age of more than 18 years.
- Recently diagnosed with Endometriosis.
- Patients receiving treatment for Endometriosis.
- Patients who are willing to give consent.

**Exclusion criteria**

- Patients below 18 years.
- Patients who were not willing to join in the study.
- Psychiatric abnormalities.

## RESULTS AND DISCUSSION

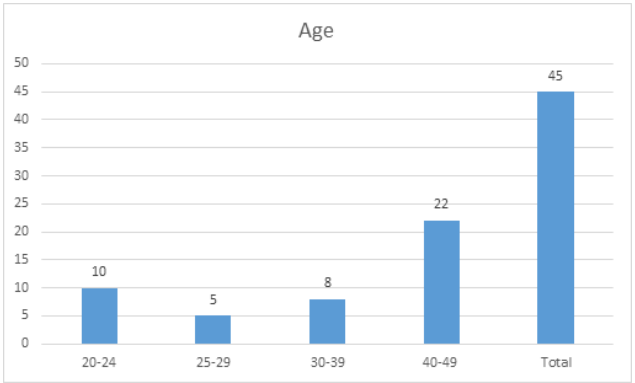


**Fig 1:** Age wise distribution

**Table 1:** Age wise distribution

| S.No | Age | Total (N=45) | Percentage (%) |
|---|---|---|---|
| 1 | 20-24 | 10 | 22.22 |
| 2 | 25-29 | 5 | 11.11 |
| 3 | 30-39 | 8 | 17.77 |
| 4 | 40-49 | 22 | 48.88 |
| | **Total** | **45** | |

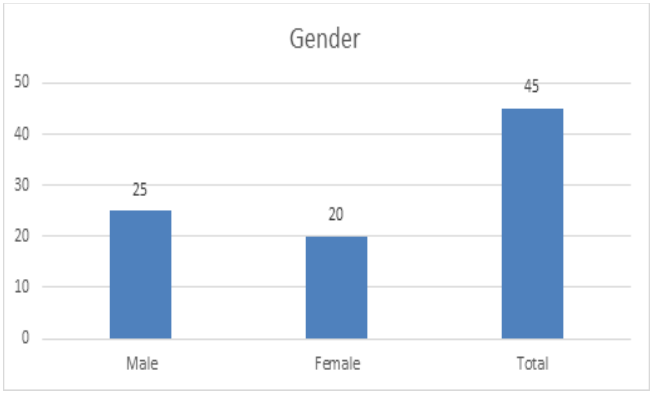


**Figure 2:** Gender

**Table 2:** Gender

| Gender | Total (N=45) | Percentage (%) |
|---|---|---|
| Male | 25 | 55.55 |
| Female | 20 | 44.44 |
| **Total** | **45** | |

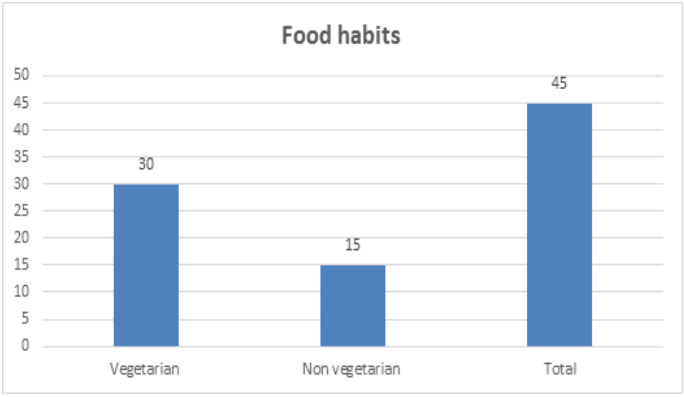


**Figure 3:** Food habits

**Table 3:** Food habits

| Food habits | Total (N=45) | Percentage (%) |
|---|---|---|
| Vegetarian | 30 | 66.66 |
| Non vegetarian | 15 | 33.33 |
| **Total** | **45** | |

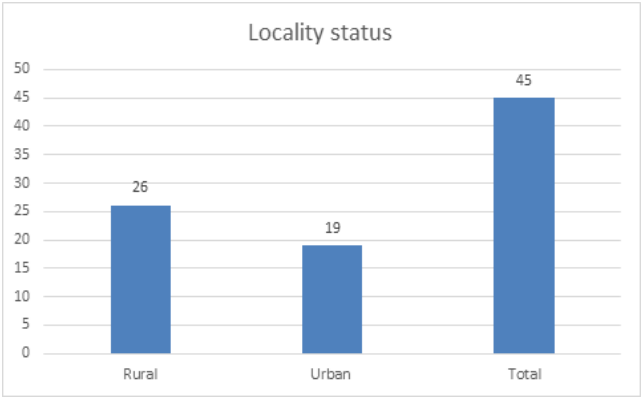


**Figure 4:** Locality status

**Table 4:** Locality status

| Locality status | Total (N=45) | Percentage (%) |
|---|---|---|
| Rural | 26 | 57.77 |
| Urban | 19 | 42.22 |
| **Total** | **45** | |

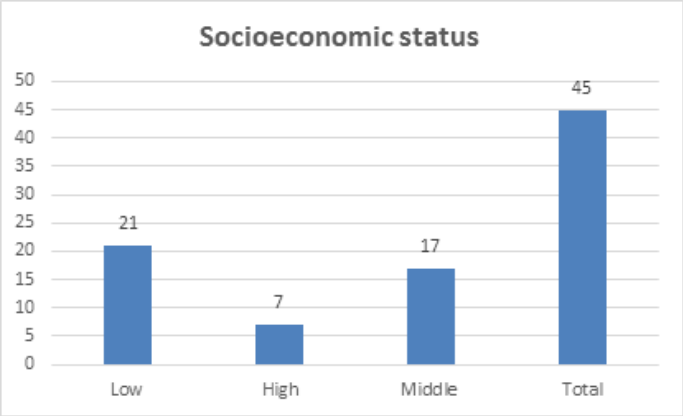


**Figure 5:** Socioeconomic status

**Table 5:** Socioeconomic status

| Socioeconomic status | Total (N=45) | Percentage (%) |
|---|---|---|
| Low | 21 | 46.66 |
| High | 7 | 15.55 |
| Middle | 17 | 37.77 |
| **Total** | **45** | |

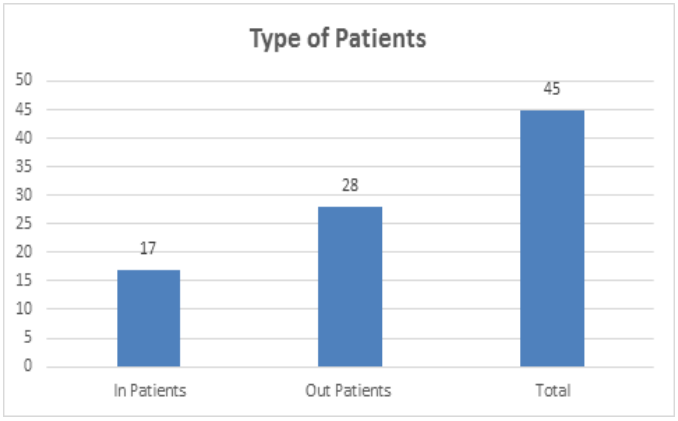


**Figure 6:** Type of Patients

**Table 6:** Type of Patients

| Type of Patients | Total (N=45) | Percentage (%) |
|---|---|---|
| In Patients | 17 | 37.77 |
| Out Patients | 28 | 62.22 |
| **Total** | **45** | |

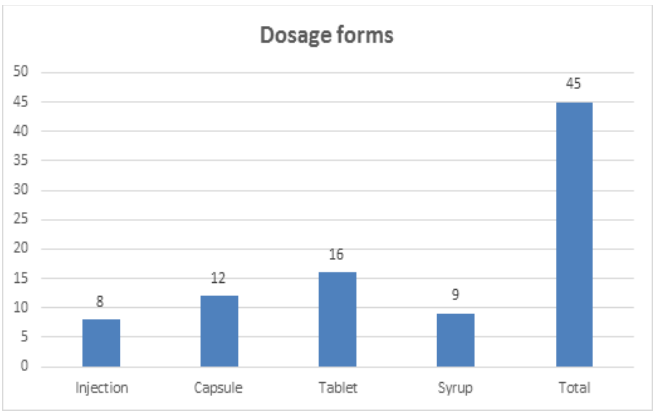


**Figure 7:** Dosage forms

**Table 7:** Dosage forms

| Dosage forms | Total (N=45) | Percentage (%) |
|---|---|---|
| Injection | 8 | 17.77 |
| Capsule | 12 | 26.66 |
| Tablet | 16 | 35.55 |
| Syrup | 9 | 20 |
| **Total** | **45** | |

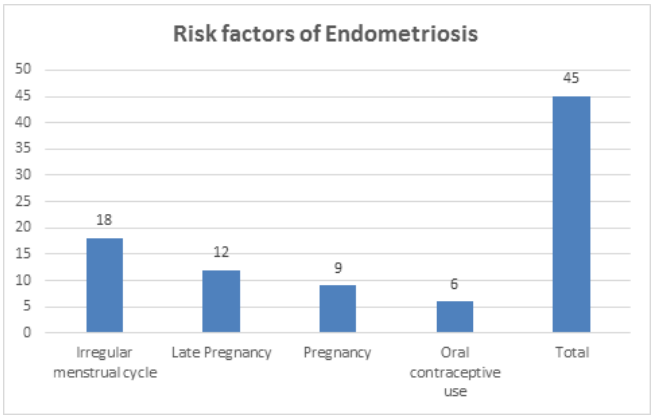


**Figure 8:** Risk factors of Endometriosis

**Table 8:** Risk factors of Endometriosis

| Risk factors | Total (N=45) | Percentage (%) |
|---|---|---|
| Irregular menstrual cycle | 18 | 40 |
| Late Pregnancy | 12 | 26.66 |
| Pregnancy | 9 | 20 |
| Oral contraceptive use | 6 | 13.33 |
| **Total** | **45** | |

## DISCUSSION

- n our study 40-49 years age patients were more 22 (48.88%) compared to other ages.
- In our study male patients were more 25(55.55%) compared to female patients were 20 (44.44 %).
- In our study Vegetarian were more 30(66.66%) compared to Non- Vegetarian were 15 (33.33 %).
- In our study Rural area patients were more 26(57.77 %), compared to urban area patients were 19 (42.22 %).
- Socioeconomic status includes low income patients were more 21 (46.66%) compared to high income patients were 7(15.55%), middle income patients were 17 (37.77 %).
- In our study Out Patients were more 28 (62.22%) compared to In Patients were 17 ( 37.77%).
- In our study dosage forms include Tablet were more 16 (35.55%) compared to other dosage forms.
- Risk factors of Endometriosis includes Irregular menstrual cycle patients were more 18 (40%) compared to other risk factors.
- Comorbidities includes Epilepsy patients were more 16 (35.55%), compared to other comorbidities.
- Clinical manifestations of endometriosis include Dysmenorrhea patients were more 13 (28.88%), compared to other clinical symptoms.
- Lab test for endometriosis includes Laparoscopy patients were more 15 (33.33%) compared to Blood test patients were 5 (11.11%)

- Drug prescribing pattern for endometriosis includes NSAIDs prescribed patients were more 10 (22.22%), compared to other drugs.
- WHO Drug prescribing indicators includes WHO Drug prescribing indicators includes Total number of patient's prescription analyzed were 45, Total number of drugs prescribed were 360, Average number of drugs per prescription were 8.0, Number of drugs prescribed by Generic name was 158, Number of drugs prescribed by Brand name was 202, Drugs included in National list of essential medicines was 117.14
- In our study Medicines prescribed patients were more 27 (60%) compared to surgery recommended patients were 18 (40%).

## CONCLUSION

The study concludes that periodic drug prescribing must be verified to promote rational and optimal use of healthcare resources. The effective clinical intervention programme are required to promote more appropriate use of drugs. Drug prescribing pattern and dispensing facilities of essential drugs in patient care areas should be improved. By encouraging generic prescribing practices and conducting regular prescription audits and enhancing prescriber education strategies can lower the treatment costs15-16. The targeted health care interventions to can reduce irrational polypharmacy, and improve the quality of patient care. In our study women from rural background were more which recommends the need of depend on primary health services for gynecological diseases to lower the morbidity among the women.

## ACKNOWLEDGMENT

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## CONFLICT OF INTERESTS

The authors declare no conflict of interest

## ETHICS APPROVAL

Not applicable

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## AI TOOL DECLARATION

The authors declare that no AI and related tools are used to write the scientific content of this manuscript.

## DATA AVAILABILITY

Data will be available on request

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